effects is by reducing platelet aggregation and microembolization downstream during mechanical reperfusion and thereby preserving the microcirculation.
Methods: Forty-seven patients with STEMI underwent primary angioplasty and/or stenting of native coronary arteries. Saphenous venous graft lesions and patients with end-stage renal disease were excluded. Twenty-seven (57.5%) patients received standard bolus and infusion of abciximab. Angiograms were evaluated by two blinded independent reviewers for Myocardial Blush Grade immediately after coronary intervention as follows: 0, no blush; 1, minimal blush; 2, moderate blush; and 3, normal blush. All patients had Thrombolysis In Myocardial Infarction (TIMI) 3 grade flow at the end of the procedure.
Results: In the abciximab group, 20/27 (74%) patients had MBG of 2-3, compared to 9/20 (45%) in the non-abciximab group ($p<0.05$). In diabetics, 6/10 (60%) in the abciximab group had a normal blush compared to 0/5 (0%) in the non-abciximab group ($p<0.05$).
Conclusion: Abciximab significantly improved myocardial microcirculation, assessed by MBG, after primary coronary intervention for acute ST elevation myocardial infarction. This effect seemed particularly prominent in the diabetic subgroup.

## 1075-44 Comparative Prognostic Value of Myocardial Blush Grade and TIMI Frame Count for Clinical Outcome After Acute Myocardial Infarction

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BACKROUND: Angiographic myocardial blush grade (MBG) and corrected TIMI frame count (CTFC) have been suggested for evaluation of myocardial reperfusion and prediction of patient outcome after PTCA for acute myocardial infarction (AMI). The comparative prognostic value of both parameters for patient outcome is not established. METHODS: To evaluate the prognostic value of MBG (0/1: no or minimal blush, 2: moderate blush, and 3 normal blush) and CTFC (number of cine frames required for dye to reach standardized distal landmarks) all 240 patients (82% male, 63±11 years) which underwent PTCA for AMI on a native coronary artery at this institution between 1/96 and 10/99 were included in this study. MBG and CTFC were determined on the final angiogram after PTCA. Patients were followed up a mean of 3±1 years after AMI to determine the occurrence of death. RESULTS: 59 patient died during follow-up. Patients who died during follow-up had a significantly lower MBG and a higher CTFC (slower flow) immediately after PTCA. MBG (OR=0.48 per 1 grade rise; 95%CI: 0.32 - 0.70, $p<0.001$) and CTFC (OR= 1.02 per 1 frame rise; 95% CI: 1.00 - 1.03, $p=0.040$) were both univariate predictors of death. In a multivariate analysis only MBG proved to be a predictor of death (OR=0.49; 95% CI= 0.32-0.76, $p<0.001$). CONCLUSION: Impaired myocardial perfusion as determined by a low MBG and slow flow in the infarct related artery evaluated by CTFC are both predictors of death during follow-up after PTCA for AMI. However, MBG is the stronger predictor of death.

| Parameter | Dead | Alive | p value |
|---|---|---|---|
| MBG | 1.22±1.08 | 1.90±1.00 | <0.001 |
| CTFC | 41.9±32.5 | 33.5±24.2 | 0.036 |

## 1075-45 Intraaortic Balloon Pumping Can Preserve Microvascular Integrity and Myocardial Viability in Patients With Reperfused Anterior Acute Myocardial Infarction

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Background: Previous studies have suggested that shear stress induced by intra-aortic balloon pumping(IABP) might result in the enhancement of NO bioactivity and increase blood mixing and provide favorable washing of the chamber walls.The purpose of this study was to assess whether IABP exerts beneficial effect on microvascular function and functional and clinical outcomes in patients with acute myocardial infarction( AMI).
Methods: We randomly divided 61 patients with a first anterior AMI into two groups ,IABP(n=30) and control groups(n=31).All patients received successful coronary angioplasty within 12h the symptom onset and underwent intravenous myocardial contrast echocardiography(MCE).In the IABP group, IABP therapy was performed before primary angioplasty and maintained 24 to 48 hours.
Results: The improvement in regional left ventricular function ,wall motion score and regional wall motion was significantly better in the IABP group than in the control group.Intractable congestive heart failure ,malignant ventricular arrhythmia and pericardial effusion were more frequently found in the control group than in the IABP group(34% vs 13%,21% vs 6%,39% vs 8%,$p<0.05$,respectively).The frequency of sizable MCE no reflow phenomenon was significantly lower in the IABP group than in the control group(14% vs 35%,$p<0.05$).
Conclusion: IABP in conjunction with coronary angioplasty is associated with better functional and clinical outcomes compared to angioplasty alone in patients with an anterior AMI. MCE findings imply that an improvement in microvascular function with IABP may be attributable to this better outcome.

## 1075-46 Contribution of Microvascular Dysfunction to Impaired Flow in the Noninfarct Related Artery: Observations During Primary Intervention and Following Intracoronary Nitroprusside

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***Background:*** In the setting of acute myocardial infarction (AMI), angiographic velocity measurements indicate inappropriate slow flow in non-infarct related arteries (NIRA). The mechanism of this finding is unknown. We tested the hypothesis that microvascular dysfunction of the NIRA is at least in part responsible. ***Methods:*** Angiographic core laboratory quantitative analysis was performed for seven coronary arterial zones in patients having primary coronary intervention for AMI. Three infarct related arterial zones (IRA) and four non-infarct related zones were compared at baseline, following balloon angioplasty, stenting and intracoronary nitroprusside (50-100ugm) respectively. Flow was determined using corrected TIMI frame counts (CTFC) for each zone following each intervention. ***Results:*** Average (mean±S.D.) CTFC is listed in the table. ***Conclusion:*** Microvascular dysfunction contributes to slow flow in the NIRA among patients with AMI. Concordant changes in IRA and NIRA flow and normalization of NIRA flow in response to the direct vasodilator nitroprusside suggests an endothelium-independent mechanism and a relationship with the microvasculature of the IRA zone. This finding implies that improvement of flow to the infarct zone and/or vasodilator therapy may have a role in enhancing global myocardial blood flow in the setting of AMI.

| | IRA | NIRA |
|---|---|---|
| Baseline | | 44.3±7.0 |
| Post PTCA | 21.0±2.0 | 40.4±22.9 |
| Post Stent | 27.3±1.5 | 47.7±24.9 |
| Nitroprusside | 18.3±5.9 | 27.3±5.1 |

## 1075-47 Beneficial Effects of Brain Natriuretic Peptide in Acute Myocardial Ischemia

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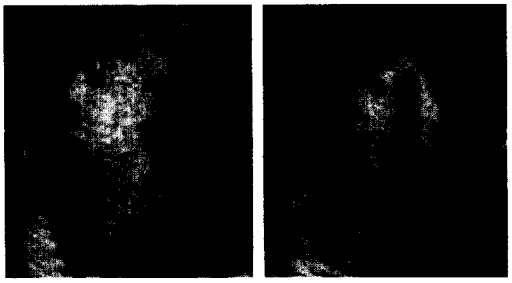
Brain natriuretic peptide (BNP) has been found to be elevated in acute myocardial ischemia, but its effect in such event is unknown. To determine whether BNP provides any benefit in acute ischemia, we studied 12 dogs at baseline, and total coronary artery ligation(OCC). Myocardial blood flow (MBF) was assessed by microsphere. Myocardial blood velocity ( β) and volume (A) were assessed by power pulse inversion contrast echo.**Results:** BNP enhanced MBF of both risk area, especially in subendocardium (from 0.13 to 0.3 ml/gm/min, $p<.001$, figure), and non-occluded regions (from 0.75 to 1.85 ml/gm/min , $p<.001$. **Conclusion:** BNP globally enhances perfusion both in normal coronary artery and in acute ischemia by recruiting collateral microcirculation. BNP has a great potential for acute myocardial ischemia treatment.

| | β | A | MBF (ml/gm/nin) |
|---|---|---|---|
| Baseline-PreBNP | 3.55±1.07 | 3.33±0.75 | 1.14±0.27 |
| Baseline-BNP | 5.84±1.77** | 6.35±1.39** | 3.66±1.26** |
| OCC-Pre-BNP | 1.17±0.62 | 1.0±0.42 | 0.13±0.1 |
| OCC-BNP | 1.41±0.61* | 1.63±0.62* | 0.26±0.19* |

*=p<.01**=p<.001 comparing Pre-BNP versus BNP



OCC OCC with BNP

## 1075-48 Clinical Outcome of Patients With Acute Myocardial Infarction Randomized to Either Coronary Stenting Plus Abciximab or Fibrinolysis Plus Abciximab (STOPAMI-2 Trial)

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**Background:** Patients with acute myocardial infarction may benefit from the addition of glycoprotein IIb/IIIa inhibitors to fibrinolytic or mechanical reperfusion strategies. We aimed to compare 2 reperfusion strategies, stenting and fibrinolysis, both combined with abciximab, in terms of myocardial salvage and clinical outcome.
**Methods:** We enrolled 162 patients with acute myocardial infarction within 12 hours from onset of symptoms, assigning 81 patients to stenting plus abciximab and 81 patients to alteplase plus abciximab. The primary endpoint was the salvage index defined as the ratio between the degree of myocardial salvage and initial perfusion defect measured by technetium 99m sestamibi scintigraphy. Additional endpoint was the comparison of the incidence of major adverse clinical events between the 2 treatments at 6 and 12 months from randomization.
**Results:** Salvage index was significantly greater in the stent group (median 0.60, [25th, 75th percentiles: 0.37, 0.82]) than in the alteplase group (median 0.41, [0.13, 0.58]), P=0.001. By 6 months, 4.9% of the stent group and 8.6% of the fibrinolysis group had died, relative risk of 0.56 [95% confidence interval, 0.17-1.88], P=0.35. The combined incidence of death and recurrent myocardial infarction was 7.4% in the stent and 17.3%